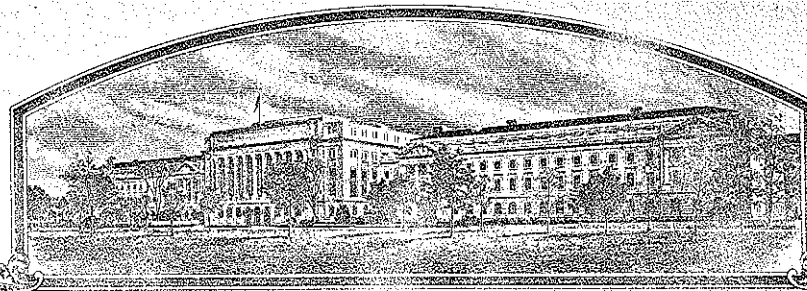


No.

7800100



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Kansas Agricultural Experiment Station

Whereas, THERE HAS BEEN PRESENTED TO THE
Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF *seventeen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW*[THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM,] TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. THE UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS ESTABLISHED BY THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

*[Waived]

WHEAT

'Newton'

In Testimony Whereof, I have hereunto set
my hand and caused the seal of the Plant
Variety Protection Office to be affixed
at the City of Washington
this 1st day of March in
the year of our Lord one thousand nine
hundred and seventy-nine

Attest:


Commissioner

Plant Variety Protection Office
Grain Division
Agricultural Marketing Service


Secretary of Agriculture

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
GRAIN DIVISION
PLANT VARIETY PROTECTION OFFICE
NATIONAL AGRICULTURAL LIBRARY
BELTSVILLE, MARYLAND 20705

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

INSTRUCTIONS: See Reverse.

1a. TEMPORARY DESIGNATION OF VARIETY KS73112		1b. VARIETY NAME Newton (CI 17715)		FOR OFFICIAL USE ONLY PV NUMBER 7800100	
2. KIND NAME Wheat		3. GENUS AND SPECIES NAME Triticum aestivum L. em Theil		FILING DATE 8-21-78	TIME 2:30 P.M.
4. FAMILY NAME (BOTANICAL) Gramineae		5. DATE OF DETERMINATION 7/29/76		FEE RECEIVED \$ 250.00 \$ 250.00 \$ 250.00	DATE 8-21-78 8-21-78 8-14-79
6. NAME OF APPLICANT(S) Kansas Agric. Expt. Station		7. ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code) Waters Hall, Kansas State University Manhattan, Kansas 66506		8. TELEPHONE AREA CODE AND NUMBER 913-532-6147	
9. IF THE NAMED APPLICANT IS NOT A PERSON, FORM OF ORGANIZATION: (Corporation, partnership, association, etc.) University		10. IF INCORPORATED, GIVE STATE AND DATE OF INCORPORATION		11. DATE OF INCORPORATION	
12. Name and mailing address of applicant representative(s), if any, to serve in this application and receive all papers: Dr. Hyde Jacobs, Head Phone (913) 532-6101 Dept. of Agronomy Kansas State University Manhattan, Kansas 66506					
13. CHECK BOX BELOW FOR EACH ATTACHMENT SUBMITTED: <input checked="" type="checkbox"/> 13A. Exhibit A, Origin and Breeding History of the Variety (See Section 52 of the Plant Variety Protection Act.) <input checked="" type="checkbox"/> 13B. Exhibit B, Novelty Statement. <input checked="" type="checkbox"/> 13C. Exhibit C, Objective Description of the Variety (Request form from Plant Variety Protection Office.) <input checked="" type="checkbox"/> 13D. Exhibit D, Additional Description of the Variety.					
14A. Does the applicant(s) specify that seed of this variety be sold by variety name only as a class of certified seed? (See Section 83(a). (If "Yes," answer 14B and 14C below.) <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO					
14B. Does the applicant(s) specify that this variety be limited as to number of generations? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		14C. If "Yes," to 14B, how many generations of production beyond breeder seed? <input checked="" type="checkbox"/> FOUNDATION <input checked="" type="checkbox"/> REGISTERED <input checked="" type="checkbox"/> CERTIFIED			
15. Does the applicant(s) agree to the publication of his/her (their) name(s) and address in the Official Journal? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO					
16. The applicant(s) declare(s) that a viable sample of basic seed of this variety will be deposited upon request before issuance of a certificate and will be replenished periodically in accordance with such regulations as may be applicable. The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Act.					

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

JUL 17 1978

(DATE)

Dwight W. Smith
(SIGNATURE OF APPLICANT)

1

(DATE)

(SIGNATURE OF APPLICANT)

INSTRUCTIONS

GENERAL: Send an original copy of the application, exhibits and \$250.00 fee to U.S. Dept. of Agriculture, Agricultural Marketing Service, Grain Division, National Agricultural Library, Beltsville, Maryland 20705. (See Section 180.175 of the regulations and rules of practice.) Retain one copy for your files. All items on the face of the form are self-explanatory unless noted below.

ITEM

5 Give the date the applicant determined that he had a new variety based on (1) the definition in Section 41(a) of the Act and (2) the date a decision was made to increase the seed.

13a Give (1), the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method. (2), the details of subsequent stages of selection and multiplication. (3), the type and frequency of variants during reproduction and multiplication and state how these variants may be identified and (4), evidence of stability.

13b Give a summary statement of the variety's novelty. Clearly state how this novel variety may be distinguished from all other varieties in the same crop. If the new variety most closely resembles one or a group of related varieties; (1) identify these varieties and state all differences objectively; (2) Attach statistical data for characters expressed numerically and demonstrate that these differences are significant; and (3) submit, if helpful, seed and plant specimens or photographs of seed and plant comparisons clearly indicating novelty.

13c Fill in the Exhibit C, Objective Description form for all characteristics, for which you have adequate data.

13d Describe any additional characteristics that are not described, or whose description cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the description of characteristics that are difficult to describe; such as; plant habit, plant color, disease resistance, etc.

14A If "YES" is specified (seed of this variety be sold by variety name only as a class of certified seed) the applicant may NOT reverse his affirmative decision after the variety has either been sold and so labeled or published or the certificate has been issued. However, if the applicant specifies "NO", he may change his choice. (See Section 180.15 of the Regulations and Rules of Practice.)

EXHIBIT A

Origin and Breeding History of Variety

1. Newton was selected from the cross 'Pitic 62'//II 53-526 ('Chris' sib)/'Sonora 64'/3/Sonora 64/'Klein Rendidor'/4/'Scout' made by the Pioneer Hi-Bred International, Inc. in 1967. F₂ seed was produced in Colorado from spring seeding. The F₃ and F₄ generations were grown as thinly seeded bulks in Kansas in 1969 and 1970.
2. About 6400 F₄ plant progeny lines were grown in the F₅ generation in 1971. Newton is an increase of a single F₄ plant and was assigned the Kansas selection number KS73112 in 1973. It was tested in the Kansas Intra State Nursery in 1974-1977 and in the SRPN in 1976 and 1977.
3. Off-type plants which exceed normal plant height by as much as 17 cm occur at the frequency of one plant out of 6,600. Neither the origin nor the genetics of the off-type plants is known. The degree of off-type expression depends on environment. If possible, off-type plant frequency will be reduced or eliminated by roguing future generations.
4. Newton has conformed to seed certification standards for two successive generations which bears evidence of uniformity and stability.

Exhibit A (4) Revised

4. Newton has been examined for stability and is stable.

Exhibit B Revised

Novelty Statement

Novelty is based on the unique combination of the following characters:

'Newton' is most similar to 'TAM W-101', except 'Newton' (1) grows taller (Exhibit D, Table 8), (2) resists soilborne wheat mosaic virus, (3) has LRI gene for leaf rust resistance, (4) has greater spike length and (5) has narrow square as compared to the midwide oblique glume shoulders of 'TAM W-101.' Both varieties are susceptible to Hessian fly.

OBJECTIVE DESCRIPTION OF VARIETY

WHEAT (TRITICUM SPP.)

INSTRUCTIONS: See Reverse.

NAME OF APPLICANT(S)

Kansas Agricultural Experiment Station

ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code)

Kansas State University, Waters Hall
Manhattan, Kansas 66506

FOR OFFICIAL USE ONLY

PVPO NUMBER

7800100

VARIETY NAME OR TEMPORARY
DESIGNATION

Newton

Place the appropriate number that describes the varietal character of this variety in the boxes below.

Place a zero in first box (e.g. or) when number is either 99 or less or 9 or less.

1. KIND:

 1 = COMMON 2 = DURUM 3 = EMMER 4 = SPELT 5 = POLISH 6 = POULARD 7 = CLUB

2. TYPE:

 1 = SPRING 2 = WINTER 3 = OTHER (Specify) 1 = SOFT 3 = OTHER (Specify)
2 = HARD 1 = WHITE 2 = RED 3 = OTHER (Specify)

3. SEASON - NUMBER OF DAYS FROM EMERGENCE TO:

 FIRST FLOWERING LAST FLOWERING

4. MATURITY (50% Flowering):

 NO. OF DAYS EARLIER THAN 1 = ARTHUR 2 = SCOUT 3 = CHRIS NO. OF DAYS LATER THAN 4 = LEMHI 5 = NUGAINES 6 = LEEDS

5. PLANT HEIGHT (From soil level to top of head):

 CM. HIGH CM. TALLER THAN 1 = ARTHUR 2 = SCOUT 3 = CHRIS CM. SHORTER THAN 4 = LEMHI 5 = NUGAINES 6 = LEEDS
7 = Tam 101

6. PLANT COLOR AT BOOTING (See reverse):

 1 = YELLOW GREEN 2 = GREEN 3 = BLUE GREEN

7. ANTHR COLOR:

 1 = YELLOW 2 = PURPLE

8. STEM:

 Anthocyanin: 1 = ABSENT 2 = PRESENT Hairiness of last
internode of rachis: 1 = ABSENT 2 = PRESENT NO. OF NODES (Originating from node above ground) Waxy bloom: 1 = ABSENT 2 = PRESENT Internodes: 1 = HOLLOW 2 = SOLID CM. INTERNODE LENGTH BETWEEN FLAG LEAF
AND LEAF BELOW

9. AURICLES:

 Anthocyanin: 1 = ABSENT 2 = PRESENT Hairiness: 1 = ABSENT 2 = PRESENT

10. LEAF:

 Flag leaf at booting stage: 1 = ERECT 2 = RECURVED
3 = OTHER (Specify) Flag leaf: 1 = NOT TWISTED 2 = TWISTED Hairs of first leaf sheath: 1 = ABSENT 2 = PRESENT Waxy bloom of flag leaf sheath: 1 = ABSENT 2 = PRESENT MM. LEAF WIDTH (First leaf below flag leaf) CM. LEAF LENGTH (First leaf below flag leaf)

11. HEAD:

 Density: 1 = LAX 2 = DENSE

 Shape: 1 = TAPERING 2 = STRAP 3 = CLAVATE
4 = OTHER (Specify) _____

 Awedness: 1 = AWNLESS 2 = APICALLY AWNLETED 3 = AWNLETED 4 = AWNED

 Color at maturity: 1 = WHITE 2 = YELLOW 3 = PINK 4 = RED
5 = BROWN 6 = BLACK 7 = OTHER (Specify): _____

 CM. LENGTH MM. WIDTH

12. GLUMES AT MATURITY:

 Length: 1 = SHORT (CA. 7 mm.) 2 = MEDIUM (CA. 8 mm.)
3 = LONG (CA. 9 mm.)

 Width: 1 = NARROW (CA. 3 mm.) 2 = MEDIUM (CA. 3.5 mm.)
3 = WIDE (CA. 4 mm.)

 Shoulder shape: 1 = WANTING 2 = OBLIQUE 3 = ROUNDED
4 = SQUARE 5 = ELEVATED 6 = APICULATE

 Beak: 1 = OBTUSE 2 = ACUTE 3 = ACUMINATE

13. COLEOPTILE COLOR:

 1 = WHITE 2 = RED 3 = PURPLE

14. SEEDLING ANTHOCYANIN:

 1 = ABSENT 2 = PRESENT

15. JUVENILE PLANT GROWTH HABIT:

 1 = PROSTRATE 2 = SEMI-ERECT 3 = ERECT

16. SEED:

 Shape: 1 = OVATE 2 = OVAL 3 = ELLIPTICAL

 Cheek: 1 = ROUNDED 2 = ANGULAR

 Brush: 1 = SHORT 2 = MEDIUM 3 = LONG

 Brush: 1 = NOT COLLARED 2 = COLLARED

 Phenol reaction (See instructions): 1 = IVORY 2 = FAWN 3 = LT. BROWN
4 = BROWN 5 = BLACK

 Color: 1 = WHITE 2 = AMBER 3 = RED 4 = PURPLE 5 = OTHER (Specify) _____

 MM. LENGTH MM. WIDTH

 GM. PER 1000 SEEDS

17. SEED CREASE:

 Width: 1 = 60% OR LESS OF KERNEL 'WINOKA'
2 = 80% OR LESS OF KERNEL 'CHRIS'
3 = NEARLY AS WIDE AS KERNEL 'LEMHI'

 Depth: 1 = 20% OR LESS OF KERNEL 'SCOUT'
2 = 35% OR LESS OF KERNEL 'CHRIS'
3 = 50% OR LESS OF KERNEL 'LEMHI'

18. DISEASE: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

 STEM RUST (Races)

 LEAF RUST (Races) races avirulent
to LR1

 STRIPE RUST (Races)

 LOOSE SMUT

 POWDERY MILDEW

 BUNT

 OTHER (Specify) Soilborne mosaic virus

19. INSECT: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

 SAWFLY

 APHID (Bydv.)

 GREEN BUG

 CEREAL LEAF BEETLE

 OTHER (Specify) _____

 HESSIAN FLY
RACES:

 GP

 A

 B

 C

 D

 E

 F

 G

20. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED:

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant tillering	TAM W-101	Seed size	
Leaf size	TAM W-101	Seed shape	
Leaf color	TAM W-101	Coleoptile elongation	TAM W-101
Leaf carriage	TAM W-101	Seedling pigmentation	TAM W-101

INSTRUCTIONS

GENERAL: The following publications may be used as a reference aid for the standardization of terms and procedures for completing this form:

- (a) L.W. Briggie and L. P. Reitz, 1963, Classification of Triticum Species and Wheat Varieties Grown in the United States, Technical Bulletin 1278, United States Department of Agriculture.
- (b) W.E. Walls, 1965, A Standardized Phenol Method for Testing Wheat Seeds for Varietal Purity, contribution No. 28 to the handbook of seed testing prepared by the Association of Official Seed Analysts. (See attachment.)

LEAF COLOR: Nickerson's or any recognized color fan should be used to determine the leaf color of the described variety.

EXHIBIT D

Newton Characteristics That Cannot be Accurately Conveyed in Exhibit C.

1. The August 1977, Kansas Agricultural Experiment Station Report of Progress 311, "Kansas Performance Tests with Fall-planted Small Grains", constitutes a part of this Exhibit.

a. Attention is directed to contrasts between Newton and TAM W-101 characteristics shown in Table 2 which includes Newton's superior test weight rating (4 compared to 6) and adult tolerance to stem rust rating (3 compared to 7).

b. Yield data supporting Newton release appears in Tables 4 and 7. Data supporting maturity and plant height statements appear in Table 8.

2. Miscellaneous observations which assist in distinguishing Newton from TAM W-101 follow:

a. At boot stage, TAM W-101 flag leaves are more upright and less twisted than those of Newton. TAM W-101 leaves are wider than those of Newton.

b. At maturity unweathered Newton glumes dry white. In contrast, TAM W-101 glumes are tinged yellowish white particularly the upper tips.

Exhibit D Supplement

The attached copies of "Chemical, milling and baking data for the Kansas intrastate nursery composites of hard winter wheat varieties harvested in 1976" and its sequel for 1977 are submitted as a part of Exhibit D. In the 1976 report, 'Newton' is designated by the selection number KS73112.

CHEMICAL, MILLING, AND BAKING DATA FOR THE KANSAS INTRASTATE

NURSERY COMPOSITES OF HARD WINTER WHEAT VARIETIES

HARVESTED IN 1976

Chemical, milling, and baking data for the Kansas Intrastate Nursery composites of hard winter wheat progenies harvested in 1976 are given in Table 1. Mixograms of 10-g. flour samples are reproduced in Figures 1 and 2.

A composite sample of each entry was made up of equal quantities from each of five stations (Parsons, Hutchinson, Manhattan, Powhattan, and Belleville) in the eastern half and three stations (Minneola, Hays, and Colby) in the western half of Kansas.

When producing a continuous phase of protein during mixing, protein content becomes increasingly limiting as it decreases below about 12%, so that mixing time increases as protein content decreases below about 12%. Thus, when flour protein content is below 12%, mixing time in Table 1 has been decreased about 12% for each 1% of protein below 12% before comparing mixing times of varieties.

Among the CIMMYT/Scout entries KS73114 to KS73277, selections KS73253 and KS73261 had the highest wheat and flour protein contents. KS73263 has an unusually high loaf volume potential.

KS74H54 has the best loaf volume potential of the Bezostaja/Eagle selections.

Mixing times of KS74H20 and KS74H48 are too long and that of KS74H30 is questionably long.

Parker 76 and Parker have low loaf volume potentials.

K. F. Finney, M. D. Shogren, L. C. Bolte,
J. D. Hubbard, B. M. Eichman, J. A. Jatko, and
F. L. Smith

Grain Quality and End-Use Properties Unit, ARS
U.S. Grain Marketing Research Center
1515 College Avenue
Manhattan, Kansas 66502
March 7, 1977

Table 1. Chemical, Milling, and Baking Data for the Kansas Intrastate Nursery Composites of Hard Winter Wheat Cultivars Harvested in 1976. 1/

Variety	C.I. or Sel. No.	Wheat 2/			Bread-baking Data 2/									
		Wt. Per Bu. lbs.	Ash %	Protein %	Flour Yield %	Flour 2/		Absorption %	As Rec'd min.	Cor-rected To Grain min.	Crumb	As Rec'd cc.	Corrected To cc.	Loaf Volume
						Ash %	Protein %							
Eagle	15098	61.1	1.61	12.5	72.6	.39	11.5	63.0	8 $\frac{5}{8}$	12.0% P	S	912	11.5% P	912
CIMMYT/Scout	KS73112	61.2	1.58	11.7	71.7 4/	.37	10.5	61.8	6 $\frac{3}{8}$	5 $\frac{1}{4}$	S	863	938	938
Tam W-101	15324	60.3	1.64	12.7	72.1 4/	.42	11.4	64.9	4 $\frac{5}{8}$	4 $\frac{1}{4}$	S	935	942	942
CIMMYT/Scout	KS73114	60.3	1.61	12.1	72.0	.37	10.9	62.6	4 $\frac{7}{8}$	4 $\frac{1}{4}$	S	898	943	943
"	KS73167	61.5	1.61	12.0	72.6	.39	10.9	62.4	5	4 $\frac{3}{8}$	S	899	944	944
"	KS73253	60.9	1.59	12.4	72.6	.38	11.2	63.1	4 $\frac{1}{4}$	3 $\frac{7}{8}$	S	954	978	978
"	KS73261	61.5	1.59	12.2	73.6	.39	11.0	64.1	5 $\frac{7}{8}$	5 $\frac{1}{8}$	S	925	964	964
"	KS73138	59.6	1.62	11.7	71.6	.39	10.6	63.0	4 $\frac{3}{8}$	3 $\frac{5}{8}$	S	888	958	958
"	KS73229	60.4	1.60	11.7	72.0	.37	10.5	63.7	4 $\frac{3}{4}$	3 $\frac{7}{8}$	S	900	980	980
"	KS73248	60.2	1.62	12.0	72.2	.38	10.7	63.2	4 $\frac{1}{2}$	3 $\frac{3}{4}$	S	926	991	991
"	KS73263	59.8	1.62	11.8	71.6	.39	10.5	62.5	3 $\frac{5}{8}$	3	S	948	1035	1035
"	KS73277	60.5	1.62	11.9	71.4	.37	10.4	62.2	5 $\frac{1}{8}$	4 $\frac{1}{8}$	S	875	960	960
II21183/C0652643/2/														
Lcr/KS62136	C0725052	60.1	1.59	11.7	73.3 4/	.41	10.3	61.7	6	4 $\frac{3}{4}$	S	870	963	963
Lindon	17440	61.4	1.59	11.7	73.0 4/	.41	10.7	62.4	5 $\frac{3}{8}$	4 $\frac{1}{2}$	S	880	940	940
Pkr-5/Ag (Parker 76)	KS74124	62.2	1.59	13.6	73.5	.45	12.4	63.6	4 $\frac{3}{4}$	-	S	878	823 Q	823 Q
62A2712-7/Centurk	TX71A801	58.9	1.59	12.2	70.7 5/	.39	10.7	64.0	6 $\frac{1}{8}$	5 $\frac{1}{8}$	S	895	957	957
Bezostaja/Eagle	KS74H4	60.2	1.57	13.4	74.4	.41	12.4	65.3	4 $\frac{1}{2}$	-	S	932	872	872
"	KS74H7	59.2	1.65	13.7	75.2	.43	12.9	64.3	6 $\frac{5}{8}$	-	S	980	884	884

Table 1. (cont.), page 2

Variety	C.I. or Sel. No.	Wheat ^{2/}			Bread-baking Data ^{2/}									
		Wt. Per Bu. lbs.	Ash %	Pro- tein %	Flour Yield %	Flour ^{2/}		Ab- sorp- tion %	Mixing Time ^{3/}			Loaf Volume		
						Ash %	Pro- tein %		As Rec'd min.	Cor- rect- ed To min.	Crumb To Grain P	As Rec'd cc.	Cor- rect- ed To cc.	
Bezostaja/Eagle	KS74H12	60.4	1.60	12.8	73.1	.42	12.0	64.9	7½	12.0% P	S	892	11.5% P	859
"	KS74H14	59.0	1.62	13.4	73.1	.41	12.6	65.4	6¾	-	S	943	869	
"	KS74H20	60.1	1.58	12.8	73.5	.42	12.1	65.9	9¾	U	S	902	862	
"	KS74H30	60.6	1.51	12.8	74.5	.40	11.6	63.9	8½	8¼	Q	861	854	
"	KS74H37	59.6	1.66	13.2	72.8	.39	12.4	64.3	6¾	-	S	920	861	
"	KS74H41	59.9	1.53	12.6	73.5	.34	11.8	64.7	7	6½	S	872	853	
"	KS74H48	59.5	1.68	13.9	72.7	.37	12.9	65.4	9½	U	S	942	851	
"	KS74H54	60.8	1.52	12.7	72.9	.37	11.8	66.9	6¾	¾	S	919	898	
Agate	NE69442	60.5	1.58	11.9	73.5	.36	10.8	61.7	7½	6½	S	863	913	
Scout/Tascosa	KS73H441	61.9	1.50	12.6	73.5	.35	11.4	66.2	7½	6½	S	919	926	
CIMMYT/Scout	KS73H530	60.4	1.65	13.7	73.9	.34	12.4	62.1	6½	-	S	943	881	
Parker	13285	61.3	1.57	12.8	73.2	.39	11.6	61.5	5¾	5¾	Q-S	824	818	Q

1/ Chemical data expressed on a 14% moisture basis.

2/ S, Q, and U - Satisfactory, questionable, and unsatisfactory quality with respect to properties in question. A satisfactory rating is inferred in the absence of a designated one. One unsatisfactory rating, in general, characterizes a variety as undesirable for hard wheat milling and breadmaking purposes. Crumb colors were satisfactory for all entries.

3/ Mixing time used in baking is evaluated in conjunction with other mixing properties obtained from the 10-g. mixogram.

4/ Softer than average hard wheat milling properties but entirely satisfactory.

5/ Questionable hard wheat milling properties -- softer than normal.

CHEMICAL, MILLING, AND BAKING DATA FOR THE KANSAS INTRASTATE

NURSERY COMPOSITES OF HARD WINTER WHEAT VARIETIES

HARVESTED IN 1977

Chemical, milling, and baking data for the Kansas Intrastate Nursery composites of hard winter wheat progenies harvested in 1977 are given in Table 1. Mixograms of 10-g. flour samples are reproduced in Figures 1, 2, and 3.

A composite sample of each entry was made up of equal quantities from each of four stations (Parsons, Hutchinson, Manhattan, and Powhattan) in the eastern half and five stations (Minneola, Hays, Garden City, Tribune, and Colby) in the western half of Kansas.

When producing a continuous phase of protein during mixing, protein content becomes increasingly limiting as it decreases below about 12%, so that mixing time increases as protein content decreases below about 12%. Thus, when flour protein content is below 12%, mixing time in Table 1 has been decreased about 12% for each 1% of protein below 12% before comparing mixing times of varieties.

Loaf volumes for all samples varied from good to excellent. Those for the CIMMYT/Scout samples were excellent.

Mixing times of KS74H20, KS74H30, and KS74H48 are questionably long. Mixing times of KS73253R, KS73263, and KS75178 probably are somewhat shorter than desirable.

It is noteworthy that mixing time of KS73167W (white glumes) is the longest and KS73167R (red glumes) the shortest of the group of three. The mean mixing time of the W- and R-selections approximately equals that of the original KS73167. Similar results were obtained for KS73253 and its W- and R-selections. In each group of three samples, however, wheat yields (Heyne, Walter, and Nielson, KIN, 1977) of the W-samples were lowest.

Wheat protein contents of the KS73253 samples are appreciably higher than those of the KS73167 samples. KS75219 (white bran) had the highest wheat protein content of the CIMMYT/Scout samples.

Overall functional properties of KS74H14 were the best of the Bezostaja/Eagle samples; but KS74H20 had the best yield (Heyne, Walter, and Nielson, KIN, 1977).

Considering wheat yield, KS74H109 has the most promising overall functional properties of the Kaw/Atlas//2*Eagle samples.

OK711092A (Payne, C.I. 17717) has relatively high wheat protein content of 13.3%, 0.5 percentage point higher than that of Eagle.

K. F. Finney, M. D. Shogren, L. C. Bolte, J. D. Hubbard,
B. M. Eichman, J. A. Jatko, and F. L. Smith

Hard Winter Wheat Quality Laboratory
Grain Quality and End-Use Properties Unit
U.S. Grain Marketing Research Laboratory, SEA, USDA
1515 College Avenue
Manhattan, Kansas 66502
February 27, 1977

Table 1. Chemical, Milling, and Baking Data for the Kansas Intrastate Nursery Composites of Hard Winter Wheat Progenies Harvested in 1977. ^{1/}

Bread-baking Data ^{2/}													
Variety	C.I. or Sel. No.	Wheat ^{2/}				Mixing Time ^{3/}				Loaf Volume			
		Wt. Per Bu.	Ash %	Pro- tein %	Flour Yield %	Flour ^{2/}		Ab- sorp- tion %	Cor-		Crumb Grain	As Rec'd	
						Ash %	Pro- tein %		rect-	ed to			
Eagle	15068	60.3	1.61	12.8	74.3	.41	11.8	64.1	5½	5½	S	1003	12.0% P
Newton	KS73112	59.7	1.58	12.3	72.2	.40	11.0	62.7	4⅝	4⅝	S	940	1020
Tam W-101	15324	60.4	1.64	13.1	74.1	.41	11.7	66.5	4⅝	4	S	960	983
CIMMYT/Scout	KS73167	60.7	1.56	12.0	72.9	.40	10.9	63.1	4½	3⅞	S	920	1006
"	KS73167W	60.5	1.58	12.0	73.8	.40	11.0	63.7	4⅞	4⅞	S	938	1018
"	KS73167R	60.5	1.58	12.0	72.5	.40	10.9	63.7	3⅞	3⅞	S	931	1019
"	KS73229	59.2	1.61	12.5	71.2	.40	11.2	63.5	4¼	3⅞	S	928	989
"	KS73253	59.8	1.58	12.4	73.1	.40	11.2	63.7	3⅞	3⅞	S	963	1028
"	KS73253W	60.2	1.53	12.7	73.5	.40	11.5	64.7	4⅝	4⅝	S	980	1020
"	KS73253R	60.1	1.57	12.5	72.8	.40	11.1	62.4	3⅞	3	S	938	1009
"	KS73261	60.8	1.57	12.2	71.5	.40	11.0	62.2	5⅛	4⅛	S	959	1042
"	KS73263	59.2	1.64	12.1	71.8	.40	10.7	61.8	3½	3	S	940	1048
"	KS75178	59.4	1.59	12.2	71.9	.40	10.8	62.4	3¼	2¾	S	930	1027
"	KS75210	60.9	1.62	12.1	72.2	.40	10.7	64.3	4⅞	4	S	958	1069
"	KS75216	58.7	1.56	12.6	69.9	.44	11.2	60.4	4¾	4¼	S	948	1011
"	KS75219	57.3	1.59	13.0	70.6	.44	11.7	62.4	5	4⅞	S	982	1006
II 21183/CO652363//	CO725049	59.4	1.61	12.4	72.0	.40	11.0	63.7	4⅞	4⅞	S	899	974
Lcr/KS62136	17440	60.9	1.68	12.8	73.6	.40	11.4	63.2	4⅞	4⅞	S	925	969
Lindon (CO725055)													

Table 1. (cont.), page 2

Variety	C.I. or Sel. No.	Wheat- ^{2/}				Bread-baking Data- ^{2/}							
		Wt. Per Bu.	Ash %	Pro- tein %	Flour Yield %	Flour- ^{2/}		Ab- sorp- tion %	Mixing Time- ^{3/}		Loaf Volume		
						Pro- tein %	Ash %		As Rec'd min.	Cor- rect- ed To min.	Crumb As Rec'd cc.	Cor- rect- ed To cc.	
Agate, NE69442	17463	60.3	1.61	12.9	75.2	.40	11.7	63.5	4	12.0% P	903	924	
Bezostaja/Eagle	KS74H12	60.2	1.61	13.8	74.2	.41	12.7	66.2	5 1/2	-	S	998	948
"	KS74H14	59.7	1.66	13.4	73.3	.40	12.5	65.2	5	-	S	1019	981
"	KS74H20	60.3	1.60	13.3	74.5	.41	12.5	65.2	6 3/8 Q	-	S	1013	975
"	KS74H30	60.2	1.55	13.0	73.6	.41	12.3	67.1	6 3/8 Q	-	S	983	961
"	KS74H48	59.7	1.64	13.9	74.2	.41	12.9	65.4	6 1/2 Q	-	S	990	927
Kaw/Atlas 50//2*Eagle	KS74H109	60.3	1.60	13.4	75.0 4/	.47	12.5	64.6	5 1/4	-	S	1020	982
"	KS74H112	60.0	1.61	13.5	73.7	.44	12.4	64.2	4 7/8	-	S	998	968
"	KS74H118	60.4	1.64	13.8	73.1	.45	12.6	64.5	5 7/8	-	S	1016	971
"	KS74H123	60.5	1.68	13.9	73.8	.45	12.9	65.7	4 5/8	-	S	1047	979
"	KS74H126	60.4	1.70	14.3	74.7	.51 Q	13.5	65.1	4 1/2	-	S	1065	955
Olsen's Dwarf/2*Eagle	KS75H3719	55.8	1.70	13.3	73.8	.50	12.2	63.5	4 5/8	-	S	968	954
Buckskin/Homestead	NE73640	60.3	1.56	12.9	74.5	.39	11.9	65.1	4 3/8	-	S	983	991
"	NE73641	60.0	1.64	13.1	75.5	.40	11.9	63.7	4 1/8	-	S	943	950
"	NE73644	60.1	1.59	12.9	75.8	.44	11.7	63.2	4 3/8	4 1/4	S	929	951
Centurk Selection	NE69291	60.1	1.61	12.4	71.6	.45	11.1	63.9	6 5/8	5 7/8	S	882	947
62A2712-7/Centurk	TX71A801	58.7	1.59	12.5	70.5 5/	.40	11.2	63.6	5 3/8	4 7/8	S	959	1023
Payne	17717	59.6	1.74	13.3	74.7 4/	.49 Q	12.0	62.2	3 1/2	-	S	968	968
Rall	17578	60.3	1.54	12.0	75.3	.41	11.3	60.3	3 1/4	3	S	923	976

Table 1. (cont.) page 3

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- 1/ Chemical data expressed on a 14% moisture basis.
 - 2/ S, Q, and U -- Satisfactory, questionable, and unsatisfactory quality with respect to properties in question. A satisfactory rating is inferred in the absence of a designated one. One unsatisfactory rating, in general, characterizes a variety as undesirable for hard wheat milling and breadmaking purposes. Crumb colors were satisfactory for all entries.
 - 3/ Mixing time used in baking is evaluated in conjunction with other mixing properties obtained from the 10-g. mixogram.
 - 4/ Softer than average hard wheat milling properties but entirely satisfactory.
 - 5/ Questionable hard wheat milling properties -- softer than normal.

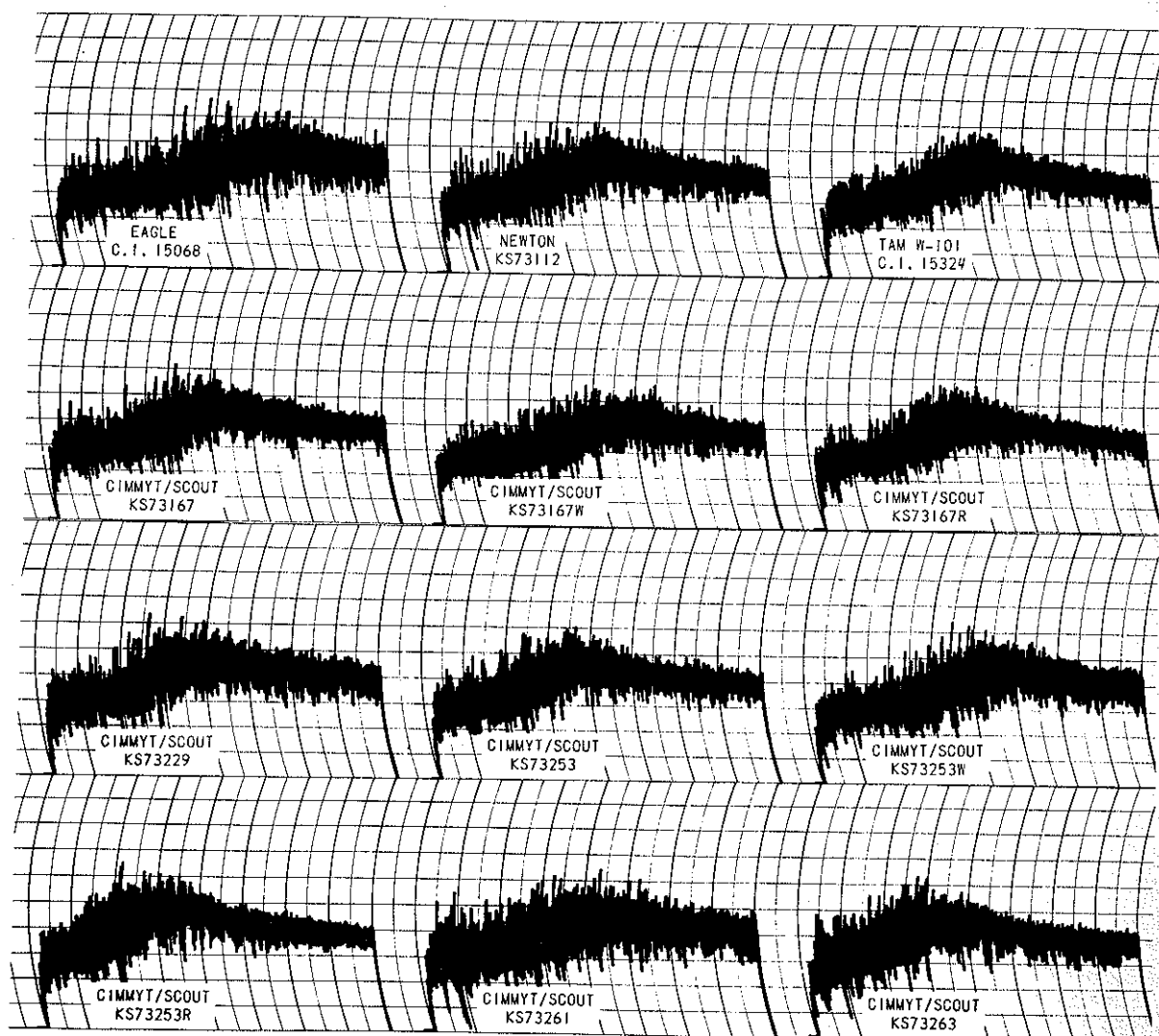


Fig. 1. Mixograms (10-g.) for the Kansas Intrastate Nursery composites of hard winter wheat cultivars harvested in 1977. Mixing time is the time (min.) to the peak. Mixing tolerance is the slope and width after the peak and stability of mixogram height on either side of the peak. Major arcs are at 1-minute intervals.

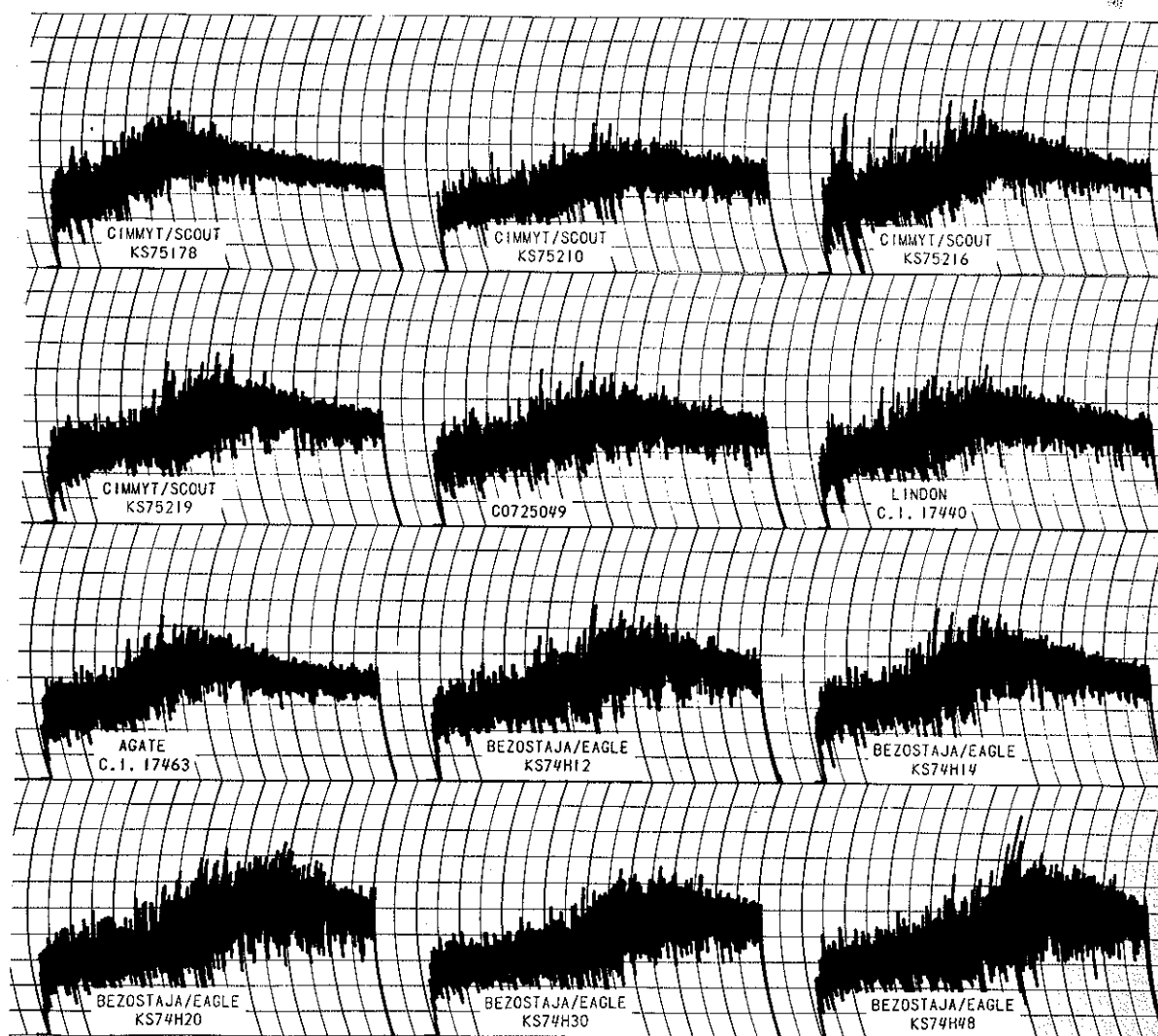


Fig. 2. Mixograms (10-g.) for the Kansas Intrastate Nursery composites of hard winter wheat cultivars harvested in 1977. Mixing time is the time (min.) to the peak. Mixing tolerance is the slope and width after the peak and stability of mixogram height on either side of the peak. Major arcs are at 1-minute intervals.

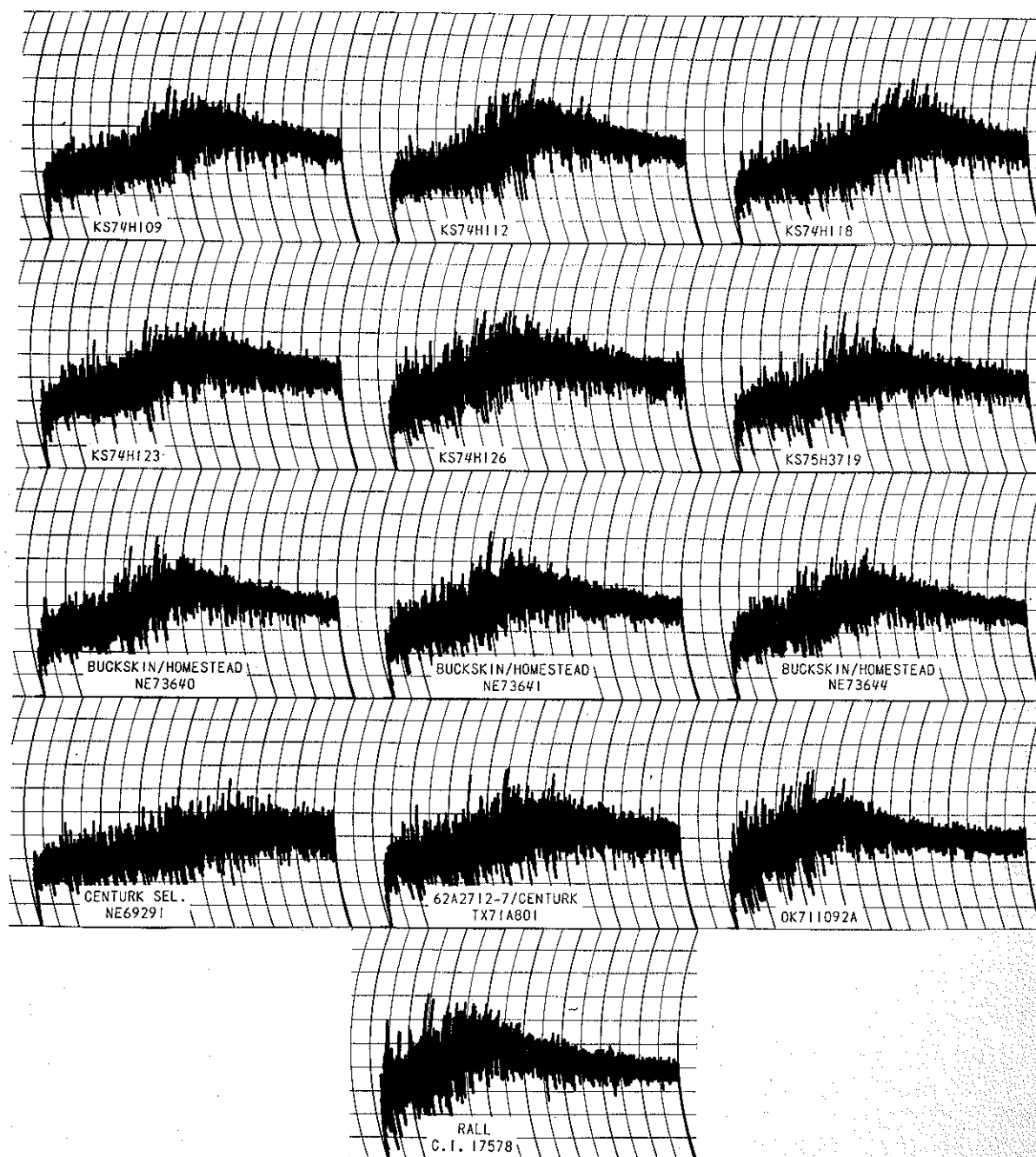


Fig. 3. Mixograms (10-g.) for the Kansas Intrastate Nursery composites of hard winter wheat cultivars harvested in 1977. Mixing time is the time (min.) to the peak. Mixing tolerance is the slope and width after the peak and stability of mixogram height on either side of the peak. Major arcs are at 1-minute intervals.



UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
Grain and Seed Division
National Agricultural Library
Beltsville, Maryland 20705

SEP 11 1978

PLANT VARIETY PROTECTION OFFICE

Gentlemen:

Subject: Application No. 7800100
Variety and Kind - 'Newton' Wheat

As provided in section 83(a) of the Plant Variety Protection Act, 7 U.S.C. 2321, we request that the Certificate on the above variety be issued with a notation on each Certificate that the right to exclude others from selling, offering for sale, reproducing, importing or exporting the variety covered by this Certificate, or using it in producing a hybrid or different variety is waived.

It has been agreed that the certificate should be issued in the name(s) of:

Kansas Agricultural Experiment Station

Waters Hall, Kansas State University, Manhattan, Kansas 66506

11-1-78
(Date)

Lloyd W. Smith
(Signature)

78-100
Seed Regulatory & Testing Branch
USDA, ARS, Livestock & Seed Division
Building 506, BARC-East
Beltsville, Maryland 20705
(301) 344 4430

12 SEP 1989

Charles Whitham
Post Office Box 327
Leoti, Kansas 67861

In reply refer to:
FSA 89-0948

Dear Mr. Whitham:

We have information that you advertised, by variety name, uncertified seed of the Newton variety of wheat.

Newton is a variety protected under the Plant Variety Protection Act. The certificate of Plant Variety Protection for this variety indicates that the seed shall not be sold by variety name unless it is certified seed. Under Federal law, Title V of the Federal Seed Act, it is illegal to sell or offer for sale or advertise Newton by variety name unless the seed is certified.

This warning is issued under Section 412 of the Federal Seed Act which provides that in certain circumstances a suitable warning may be issued instead of other action.

In addition to complying with the Federal Seed Act, persons handling seed of any protected variety are urged to exercise care to avoid infringing rights granted under Section 111 of the Plant Variety Protection Act.

Sincerely,

Stephen J. Hurst
Seed Marketing Specialist
Seed Regulatory and Testing Branch
Livestock and Seed Division

bcc: S. Bangert (KS)
✓K. Evans (PVPO)

78-100

Seed Regulatory and Testing Branch
Livestock and Seed Division
Building 506, BARC-East
Beltsville, Maryland 20705
(301) 344-4430

06 SEP 1990

Gerald Adkin
Box 47
Larned, Kansas 67550

In reply refer to:
FSA 90-0661

Dear Mr. Adkin:

We have information that you advertised, by variety name, uncertified seed of the Newton variety of wheat.

Newton is a variety protected under the Plant Variety Protection Act. The certificate of Plant Variety Protection for this variety indicates that the seed shall not be sold by variety name unless it is certified seed. Under Federal law, Title V of the Federal Seed Act, it is illegal to sell or offer for sale or advertise Newton by variety name unless the seed is certified.

This warning is issued under Section 412 of the Federal Seed Act which provides that in certain circumstances a suitable warning may be issued instead of other action.

In addition to complying with the Federal Seed Act, persons handling seed of any protected variety are urged to exercise care to avoid infringing rights granted under Section III of the Plant Variety Protection Act.

Sincerely,

Stephen J. Hurst
Seed Marketing Specialist

bcc: D. Phillips (KS)
J. Falk (KS)
✓ K. Evans (PVP0)

78-100
Seed Regulatory & Testing Branch
USDA, APIS, Livestock & Seed Division
Building 506, BARC-East
Beltsville, Maryland 20705
(301) 344 4430

22 SEP 1989

Don Diehl
Rural Route 1, Box 12
Burr Oak, Kansas 66936

In reply refer to:
FSA 89-0900

Dear Mr. Diehl:

We have information that on August 17, 1989, you advertised, by variety name, uncertified seed of the Newton and Wings varieties of wheat.

Newton and Wings are varieties protected under the Plant Variety Protection Act. The certificate of Plant Variety Protection for these varieties indicates that the seed shall not be sold by variety name unless it is certified seed. Under Federal law, Title V of the Federal Seed Act, it is illegal to sell or offer for sale or advertise Newton and Wings by variety name unless the seed is certified.

This warning is issued under Section 412 of the Federal Seed Act which provides that in certain circumstances a suitable warning may be issued instead of other action.

In addition to complying with the Federal Seed Act, persons handling seed of any protected variety are urged to exercise care to avoid infringing rights granted under Section 111 of the Plant Variety Protection Act.

Sincerely,

Stephen J. Hurst
Seed Marketing Specialist
Seed Regulatory and Testing Branch
Livestock and Seed Division

cc: S. Bangert (KS)
✓ K. Evans (PVPO)
Agripro Biosciences, Inc.
6700 Antioch, P.O. Box 2955
Shawnee Mission, Kansas 66201-1355



Seed Regulatory and Testing Branch
Livestock and Seed Division
Building 506, BARC-East
Beltsville, Maryland 20705
(301) 344-4430

04 OCT 1989

Harold W. Weber
Route 1, Box 100
La Crosse, Kansas 67548

In reply refer to:
FSA 89-1042

Dear Mr. Weber:

We have information that you advertised, by variety name, uncertified seed of the Newton variety of wheat.

Newton is a variety protected under the Plant Variety Protection Act. The certificate of Plant Variety Protection for this variety indicates that the seed shall not be sold by variety name unless it is certified seed. Under Federal law, Title V of the Federal Seed Act, it is illegal to sell or offer for sale or advertise Newton by variety name unless the seed is certified.

This warning is issued under Section 412 of the Federal Seed Act which provides that in certain circumstances a suitable warning may be issued instead of other action.

In addition to complying with the Federal Seed Act, persons handling seed of any protected variety are urged to exercise care to avoid infringing rights granted under Section 111 of the Plant Variety Protection Act.

Sincerely,

Stephen J. Hurst
Seed Marketing Specialist
Seed Regulatory and Testing Branch
Livestock and Seed Division

bcc: S. Bangert (KS)
✓K. Evans (PVPO)



7800102
Seed Branch, LSD, AMS, USDA
Building 506 BARC-East
Beltsville, Maryland 20705
(301) 344 4430

02 AUG 1989

In reply refer to:
FSA 89-0896

Mr. Albert Shaw
RR1 Box 156
Republican City, Nebraska 68971

Dear Mr. Shaw:

We have information that on or before July 26, 1989, you advertised, by variety name, uncertified seed of the Thunderbird and Newton varieties of wheat.

Thunderbird and Newton are varieties protected under the Plant Variety Protection Act. The certificates of Plant Variety Protection for these varieties indicate that the seed shall not be sold by variety name unless it is certified seed. Under Federal law, Title V of the Federal Seed Act, it is illegal to sell or offer for sale or advertise Thunderbird and Newton wheat seed by variety name unless the seed is certified.

This warning is issued under Section 412 of the Federal Seed Act which provides that in certain circumstances a suitable warning may be issued instead of other action.

In addition to complying with the Federal Seed Act, persons handling seed of any protected variety are urged to exercise care to avoid infringing rights granted under Section III of the Plant Variety Protection Act.

Sincerely,

Jonathan E. Farmer
Seed Marketing Specialist
Dcc: S. Bangert (Kansas)
— K. Evans (PVPO)

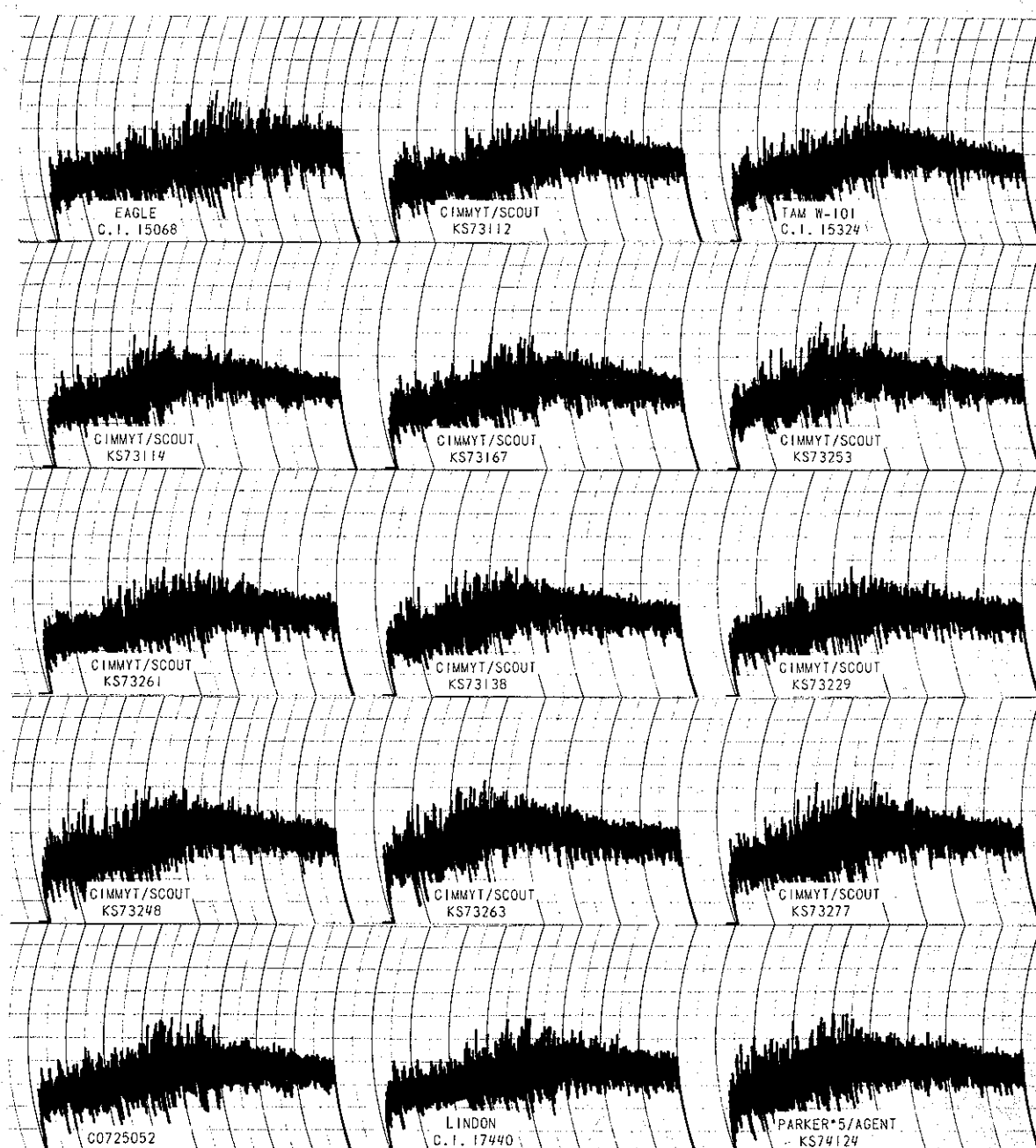


Fig. 1. Mixograms (10-g.) for the Kansas Intrastate Nursery composites of hard winter wheat cultivars harvested in 1976.

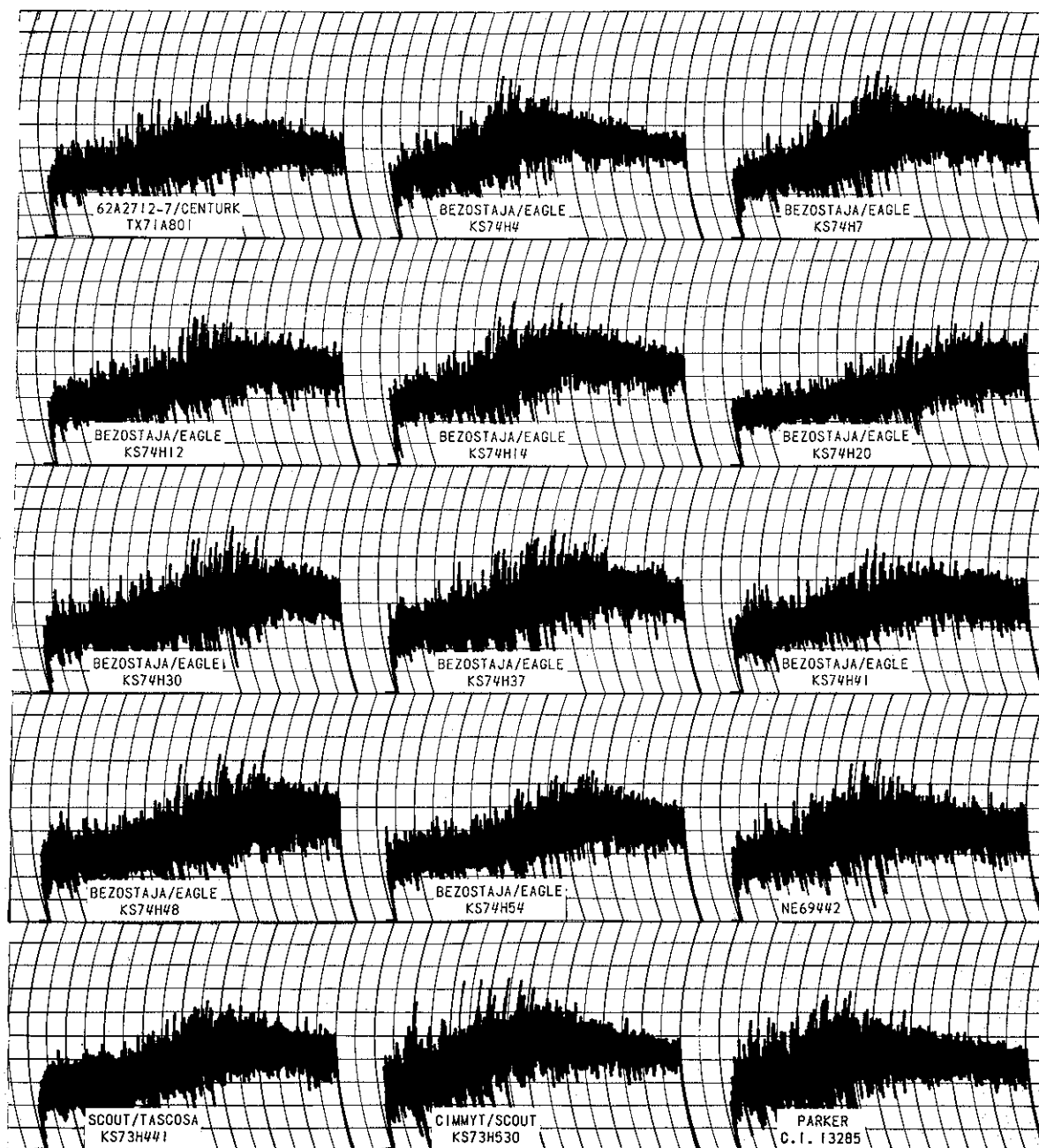


Fig. 2. Mixograms (10-g.) for the Kansas Intrastate Nursery composites of hard winter wheat cultivars harvested in 1976.

786010
Seed Branch, LSP, ARS, USDA
Building 506 BARC-East
Beltsville, Maryland 20705
(301) 344 4430

02 AUG 1989

In reply refer to:
FSA 89-0694

Mr. Paul Holovach
HCR Box 17
Sublette, Kansas 67877

Dear Mr. Holovach:

We have information that on or before July 21, 1989, you advertised, by variety name, uncertified seed of the Newton variety of wheat.

Newton is a variety protected under the Plant Variety Protection Act. The certificate of Plant Variety Protection for this variety indicates that the seed shall not be sold by variety name unless it is certified seed. Under Federal law, Title V of the Federal Seed Act, it is illegal to sell or offer for sale or advertise Newton wheat seed by variety name unless the seed is certified.

This warning is issued under Section 412 of the Federal Seed Act which provides that in certain circumstances a suitable warning may be issued instead of other action.

In addition to complying with the Federal Seed Act, persons handling seed of any protected variety are urged to exercise care to avoid infringing rights granted under Section III of the Plant Variety Protection Act.

Sincerely,

Jonathan E. Farmer
Seed Marketing Specialist
bcc: S. Bangert (Kansas)
✓ K. Evans (PVPO)